

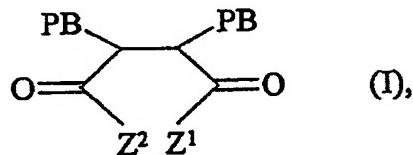
DOCKET NO.: HENK-0069 (H4842)
Application No.: 10/826,611
Office Action Dated: April 16, 2004

PATENT
REPLY FILED UNDER EXPEDITED
PROCEDURE PURSUANT TO
37 CFR § 1.116

This listing of claims will replace all prior versions, and listings, of claims in the application.

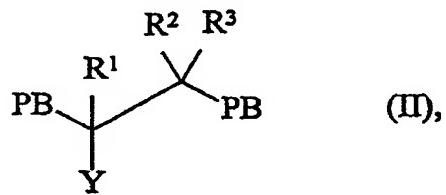
Listing of Claims:

1. (Canceled)
2. (Currently Amended) A The copolymer comprising: of claim 1,
a first structural element having Formula I:



wherein:

PB is a carbon-carbon polymer backbone;
Z¹ and Z² are, independently, ON⁺(R)₄, wherein R is, independently, wherein
R is aminosorbitol, β-D-glucopyranosylamine or β-D-glucosamine;
and a second structural element having Formula II:

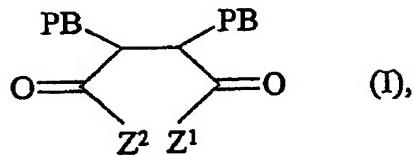


wherein:

R¹, R², and R³ are, independently, H, or C1-C4 alkyl;
Y is R, a fluorine-substituted C1-C24 alkyl radical, a fluorine-substituted cycloalkyl
or aryl C6-C24 radical, C(O)OR, a fluorine-substituted C7-C24 alkaryl radical, or a fluorine-
substituted alkoxyalkaryl radical.

3. (Canceled)

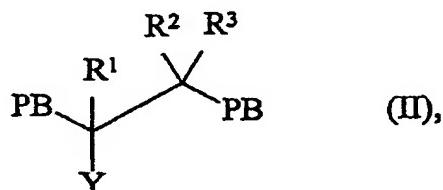
4. (Previously Presented) A copolymer comprising:
a first structural element having Formula I:



wherein:

PB is a carbon-carbon polymer backbone;
Z¹ is ONa⁺ or ONH₄⁺; and
Z² is NHR", wherein R" is, independently, H, R, a fluorine-substituted saturated or unsaturated C1-C18 radical, a fluorine-substituted saturated or unsaturated mono or polycyclic C4-C24 radical, or a fluorine-substituted aryl or heteroaryl C6-C24 radical, and wherein R is, independently, H, linear C1-C18 alkyl, an amino sugar, or (CH₂CHR'O)_mL, wherein m is an integer from 1 to about 20, R' is, independently, H or a C1-C24 alkyl radical; and L is H, CH₂CHR'N(R')₂ or CH₂CHR'N⁺(R')₃;

and a second structural element having Formula II:



wherein:

R¹, R², and R³ are, independently, H, or C1-C4 alkyl;

Y is R, a fluorine-substituted C1-C24 alkyl radical, a fluorine-substituted cycloalkyl or aryl C6-C24 radical, C(O)OR, a fluorine-substituted C7-C24 alkaryl radical, or a fluorine-substituted alkoxyalkaryl radical;
provided that the copolymer contains at least one fluorine-substituted radical.

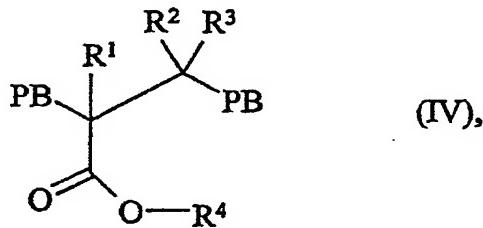
5. (Canceled)

6. (Canceled)

7. (Currently Amended) The copolymer of claim + 22, wherein the copolymer has a water solubility of at least 0.1% by weight at 20°C.

8. (Currently Amended) The copolymer of claim + 22, wherein the copolymer comprises at least 10 mol% of the first structural element.

9. (Currently Amended) The copolymer of claim + 22, further comprising a structural element having Formula IV:



wherein R⁴ is R".

10. (Currently Amended) The copolymer of claim + 22, wherein the copolymer has a molecular weight (M_w) of at least 5000.

11. (Currently Amended) The copolymer of claim + 22, wherein the copolymer has a fluorine content of at least 5 mol%.

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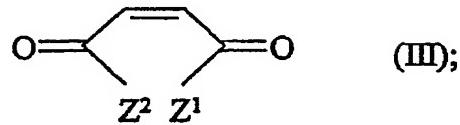
12. (Canceled)

13. (Canceled)

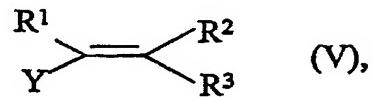
14. (Canceled)

15. (Currently Amended) A process for forming the copolymer of claim 1 2, the process comprising:

contacting at least one monomer having Formula III:



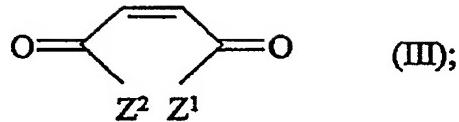
with a monomer having Formula V:



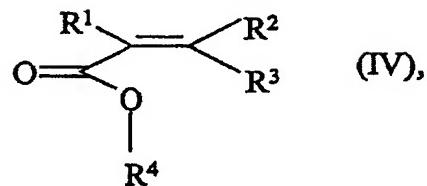
added dropwise during the copolymerization.

16. (Currently Amended) A process for forming the copolymer of claim 1 2, the process comprising:

contacting at least one monomer having Formula III:



with a monomer having Formula IV:



present in excess during the copolymerization.

17. (Currently Amended) A process for using the copolymer of claim + 22, said process comprising:

applying the copolymer of claim + 22 to a surface, thereby forming a surface coating.

18. (Original) The process of claim 17, further comprising:

decreasing the water solubility or water emulsibility of said copolymer in the surface coating.

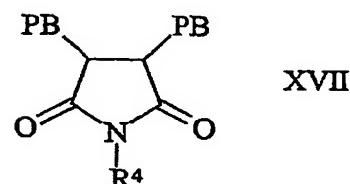
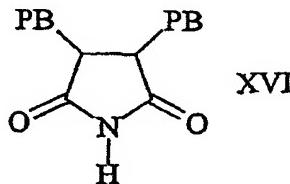
19. (Original) The process of claim 18, wherein thermal treatment is used to decrease the water solubility or water emulsibility of said copolymer.

20. (Original) The process of claim 17, wherein the surface is leather, fabric, or web.

21. (Original) The process of claim 17, wherein the surface comprises fabric or web comprising at least one fiber selected from the group consisting of manufactured fiber and natural fiber.

22. (Previously presented) A copolymer comprising:

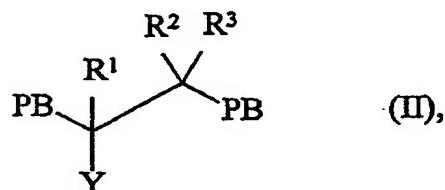
a first structural element having Formula XVI or XVII:



wherein:

PB is a carbon-carbon polymer backbone;

R⁴ is linear C1-C18 alkyl, an amino sugar, or (CH₂CHR'O)_mL, wherein m is an integer from 1 to about 20, R' is, independently, H or a C1-C24 alkyl radical, and L is H, CH₂CHR'N(R')₂ or CH₂CHR'N⁺(R')₃, a fluorine-substituted saturated or unsaturated C1-C18 radical, a fluorine-substituted saturated or unsaturated mono or polycyclic C4-C24 radical, or a fluorine-substituted aryl or heteroaryl C6-C24 radical; and a second structural element having Formula II:



wherein:

R¹, R², and R³ are, independently, H, or C1-C4 alkyl;

Y is a fluorine-substituted C1-C24 alkyl radical, a fluorine-substituted cycloalkyl or aryl C6-C24 radical, C(O)OR, a fluorine-substituted C7-C24 alkaryl radical, a fluorine-substituted alkoxyalkaryl radical, or R, wherein R is, independently, H, linear C1-C18 alkyl, an amino sugar, or (CH₂CHR'O)_mL, wherein m is an integer from 1 to about 20, R' is, independently, H or a C1-C24 alkyl radical, and L is H, CH₂CHR'N(R')₂ or CH₂CHR'N⁺(R')₃; provided that the copolymer contains at least one fluorine-substituted radical.

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23. (Canceled)

24. (Currently Amended) The copolymer of claim + 22, wherein the copolymer has a polydispersity of less than about 4.

25. (Currently Amended) The copolymer of claim + 22, wherein the copolymer has a polydispersity of less than about 2.5.